in § 63.174(a) of subpart H of this part, the percent of connectors leaking, and the total number of connectors monitored;

(H) The number of connectors for which leaks were not repaired as required in § 63.174(d) of subpart H of this part, identifying the number of those that are determined nonrepairable;

(I) The facts that explain any delay of repairs and, where appropriate, why a process shutdown was technically infeasible.

(J) The results of all monitoring to show compliance with §§ 63.164(i), 63.165(a), and 63.172(f) of subpart H of this part conducted within the semiannual reporting period.

(K) If applicable, the initiation of a monthly monitoring program under either paragraph (c)(4)(ii) or paragraph (e)(4)(i)(A) of this section.

(L) If applicable, notification of a change in connector monitoring alternatives as described in § 63.174(c)(1) of subpart H of this part.

(iii) For owners or operators electing to meet the requirements of § 63.178(b) of subpart H of this part, the Periodic report shall include the information listed in paragraphs (h)(3)(iii) (A) through (E) of this section for each process.

(A) Product process equipment train identification;

(B) The number of pressure tests conducted;

(C) The number of pressure tests where the equipment train failed either the retest or two consecutive pressure tests;

(D) The facts that explain any delay of repairs; and

(E) The results of all monitoring to determine compliance with § 63.172(f) of subpart H of this part.

(iv) Any change in the information submitted under paragraph (h)(2) of this section shall be provided in the next Periodic report.

[64 FR 33589, June 23, 1999, as amended at 67 FR 59345, Sept. 20, 2002]

§ 63.1364 Compliance dates.

(a) *Compliance dates for existing sources.* (1) An owner or operator of an existing affected source must comply with the provisions in this subpart by December 23, 2003.

(2) Pursuant to section 112(i)(3)(B) of the CAA, an owner or operator of an existing source may request an extension of up to 1 additional year to comply with the provisions of this subpart if the additional time is needed for the installation of controls.

(i) For purposes of this subpart, a request for an extension shall be submitted no later than 120 days prior to the compliance date specified in paragraph (a)(1) of this section, except as provided in paragraph (a)(2)(ii) of this section. The dates specified in § 63.6(i) of subpart A of this part for submittal of requests for extensions shall not apply to sources subject to this subpart.

(ii) An owner or operator may submit a compliance extension request after the date specified in paragraph (a)(1)(i) of this section provided the need for the compliance extension arose after that date and before the otherwise applicable compliance date, and the need arose due to circumstances beyond reasonable control of the owner or operator. This request shall include the data described in § 63.6(i)(8)(A), (B), and (D) of subpart A of this part.

(b) *Compliance dates for new and reconstructed sources.* An owner or operator of a new or reconstructed affected source must comply with the provisions of this subpart on June 23, 1999 or upon startup, whichever is later.

[64 FR 33589, June 23, 1999, as amended at 67 FR 13511, Mar. 22, 2002; 67 FR 38203, June 3, 2002]

§ 63.1365 Test methods and initial compliance procedures.

(a) *General.* Except as specified in paragraph (a)(4) of this section, the procedures specified in paragraphs (c), (d), (e), (f), and (g) of this section are required to demonstrate initial compliance with § 63.1362(b), (c), (d), (f), and (g), respectively. The provisions in paragraph (a)(1) of this section apply to design evaluations that are used to demonstrate compliance with the standards for process vents and storage vessels. The provisions in paragraph (a)(2) of this section apply to performance tests that are specified in paragraphs (c), (d), and (e) of this section. The provisions in paragraph (a)(3) of this section describe initial compliance procedures for flares. The provisions in paragraph (a)(5) of this section are used to demonstrate initial compliance with the alternative standards specified in § 63.1362(b)(6) and (c)(4). The provisions in paragraph (a)(6) of this section are used to comply with the outlet concentration requirements specified in § 63.1362(b)(2)(iv)(A), (b)(3)(ii), (b)(4)(ii)(A), (b)(5)(ii), and (b)(5)(iii).

(1) *Design evaluation.* To demonstrate that a control device meets the required control efficiency, a design evaluation must address the composition and HAP concentration of the vent stream entering the control device. A design evaluation also must address other vent stream characteristics and control device operating parameters as specified in any one of paragraphs (a)(1)(i) through (vii) of this section, depending on the type of control device that is used. If the vent stream is not the only inlet to the control device, the efficiency demonstration also must consider all other vapors, gases, and liquids, other than fuels, received by the control device.

(i) For an enclosed combustion device used to comply with the provisions of § 63.1362(b)(2)(iv), (b)(4)(ii), (c)(2)(iv)(B), or (c)(3) with a minimum residence time of 0.5 seconds and a minimum temperature of 760 °C, the design evaluation must document that these conditions exist.

(ii) For a combustion control device that does not satisfy the criteria in paragraph (a)(1)(i) of this section, the design evaluation must document control efficiency and address the following characteristics, depending on the type of control device:

(A) For a thermal vapor incinerator, the design evaluation must consider the autoignition temperature of the organic HAP, must consider the vent stream flow rate, and must establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

(B) For a catalytic vapor incinerator, the design evaluation must consider the vent stream flow rate and must establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

(C) For a boiler or process heater, the design evaluation must consider the vent stream flow rate, must establish the design minimum and average flame zone temperatures and combustion zone residence time, and must describe the method and location where the vent stream is introduced into the flame zone.

(iii) For a condenser, the design evaluation must consider the vent stream flow rate, relative humidity, and temperature, and must establish the maximum temperature of the condenser exhaust vent stream and the corresponding outlet organic HAP compound concentration level or emission rate for which the required reduction is achieved.

(iv) For a carbon adsorption system that regenerates the carbon bed directly onsite in the control device such as a fixed-bed adsorber, the design evaluation must consider the vent stream flow rate, relative humidity, and temperature, and must establish the design exhaust vent stream organic compound concentration level, adsorption cycle time, number of carbon beds and their capacities, type and working capacity of activated carbon used for the carbon beds, design total regeneration stream mass or volumetric flow over the period of each complete carbon bed regeneration cycle, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon. For vacuum desorption, the pressure drop must be included.

(v) For a carbon adsorption system that does not regenerate the carbon bed directly onsite in the control device such as a carbon canister, the design evaluation must consider the vent stream mass or volumetric flow rate, relative humidity, and temperature, and must establish the design exhaust vent stream organic compound concentration level, capacity of the carbon bed, type and working capacity of activated carbon used for the carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(vi) For a scrubber, the design evaluation must consider the vent stream composition, constituent concentrations, liquid-to-vapor ratio, scrubbing liquid flow rate and concentration, temperature, and the reaction kinetics of the constituents with the scrubbing liquid. The design evaluation must establish the design exhaust vent stream organic compound concentration level and must include the additional information in paragraphs (a)(1)(vi)(A) and (B) of this section for trays and a packed column scrubber.

(A) Type and total number of theoretical and actual trays;

(B) Type and total surface area of packing for entire column, and for individual packed sections if column contains more than one packed section.

(vii) For fabric filters, the design evaluation must include the pressure drop through the device and the net gas-to-cloth ratio (i.e., cubic feet of gas per square feet of cloth).

(2) *Calculation of TOC or total organic HAP concentration.* The TOC concentration or total organic HAP concentration is the sum of the concentrations of the individual components. If compliance is being determined based on TOC, the owner or operator shall compute TOC for each run using Equation 6 of this subpart. If compliance is being determined based on total organic HAP, the owner or operator shall compute total organic HAP using Equation 6 of this subpart, except that only organic HAP compounds shall be summed; when determining compliance with the wastewater provisions of § 63.1362(d), the organic HAP compounds shall consist of the organic HAP compounds in Table 9 of subpart G of this part.

$$CG_T = \frac{1}{m}\sum_{j=1}^{m}\left(\sum_{i=1}^{n} CGS_{i,j}\right) \qquad \text{(Eq. 6)}$$

Where:

CG_T = total concentration of TOC or organic HAP in vented gas stream, average of samples, dry basis, ppmv

$CGS_{i,j}$ = concentration of sample components in vented gas stream for sample j, dry basis, ppmv

n = number of compounds in the sample

m = number of samples in the sample run.

(3) *Initial compliance using flares.* When a flare is used to comply with the standards, the owner or operator shall comply with the provisions in § 63.11(b) of subpart A of this part.

(i) The initial compliance determination shall consist of a visible emissions determination using Method 22 of 40 CFR part 60, appendix A, as described in § 63.11(b)(4) of subpart A of this part, and a determination of net heating value of gas being combusted and exit velocity to comply with the requirements of § 63.11(b)(6) through (8) of subpart A of this part. The net heating value and exit velocity shall be based on the results of performance testing under the conditions described in paragraphs (b)(10) and (11) of this section.

(ii) An owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration when a flare is used.

(4) *Exemptions from compliance demonstrations.* An owner or operator using any control device specified in paragraphs (a)(4)(i) through (ii) of this section is exempt from the initial compliance provisions in paragraphs (c), (d), and (e) of this section.

(i) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(ii) A boiler or process heater into which the emission stream is introduced with the primary fuel.

(5) *Initial compliance with alternative standard.* Initial compliance with the alternative standards in § 63.1362(b)(6) and (c)(4) for combustion devices is demonstrated when the outlet TOC concentration is 20 ppmv or less, and the outlet HCl and chlorine concentration is 20 ppmv or less. Initial compliance with the alternative standards in § 63.1362(b)(6) and (c)(4) for noncombustion devices is demonstrated when the outlet TOC concentration is 50 ppmv or less, and the outlet HCl and chlorine concentration is 50 ppmv or less. To demonstrate initial compliance, the owner or operator shall be in compliance with the monitoring provisions in § 63.1366(b)(5) on the initial compliance date. The owner or operator shall use Method 18 to determine the predominant organic HAP in the emission stream if the TOC monitor is calibrated on the predominant HAP.

(6) *Initial compliance with the 20 ppmv outlet limit.* Initial compliance with the 20 ppmv TOC or total organic HAP concentration is demonstrated when the outlet TOC or total organic HAP concentration is 20 ppmv or less. Initial

compliance with the 20 ppmv HCl and chlorine concentration is demonstrated when the outlet HCl and chlorine concentration is 20 ppmv or less. To demonstrate initial compliance, the operator shall use applicable test methods described in paragraphs (b)(1) through (9) of this section, and test under conditions described in paragraph (b)(10) or (11) of this section, as applicable. The owner or operator shall comply with the monitoring provisions in § 63.1366(b)(1) through (5) on the initial compliance date.

(7) *Outlet concentration correction for supplemental gases.* If supplemental gases are added to a vent stream for which compliance with an outlet concentration standard in § 63.1362 or 63.1363 will be demonstrated, the owner or operator must correct the outlet concentration as specified in paragraphs (a)(7)(i) and (ii) of this section.

(i) *Combustion device.* Except as specified in § 63.1366(b)(5)(ii)(A), if the vent stream is controlled with a combustion device, the owner or operator must comply with the provisions in paragraphs (a)(7)(i)(A) through (C) of this section.

(A) To comply with a TOC or total organic HAP outlet concentration standard in § 63.1362(b)(2)(iv)(A), (b)(4)(ii)(A), (b)(6), (c)(2)(iv)(B), (c)(4), (d)(13), or § 63.172, the actual TOC outlet concentration must be corrected to 3 percent oxygen.

(B) If the inlet stream to the combustion device contains any HCl, chlorine, or halogenated compounds, and the owner or operator elects to comply with a total HCl and chlorine outlet concentration standard in § 63.1362(b)(3)(ii), (b)(5)(ii), (b)(5)(iii), (b)(6), or (c)(4), the actual total HCl and chlorine outlet concentration must be corrected to 3 percent oxygen.

(C) The integrated sampling and analysis procedures of Method 3B of 40 CFR part 60, appendix A, shall be used to determine the actual oxygen concentration ($\%O_{2d}$). The samples shall be taken during the same time that the TOC, total organic HAP, and total HCl and chlorine samples are taken. The concentration corrected to 3 percent oxygen (C_d) shall be computed using Equation 7 of this subpart:

$$C_c = C_m \left(\frac{17.9}{20.9 - \%O_{2d}} \right) \qquad \text{(Eq. 7)}$$

Where:

C_c = concentration of TOC, total organic HAP, or total HCl and chlorine corrected to 3 percent oxygen, dry basis, ppmv

C_m = total concentration of TOC, total organic HAP, or total HCl and chlorine in the vented gas stream, average of samples, dry basis, ppmv

$\%O_{2d}$ = concentration of oxygen measured in vented gas stream, dry basis, percent by volume.

(ii) *Noncombustion devices.* If a control device other than a combustion device, and not in series with a combustion device, is used to comply with a TOC, total organic HAP, or total HCl and chlorine outlet concentration standard, the owner or operator must correct the actual concentration for supplemental gases using Equation 8 of this subpart.

$$C_a = C_m \left(\frac{V_s + V_a}{V_a} \right) \qquad \text{(Eq. 8)}$$

Where:

C_a = corrected outlet TOC, total organic HAP, or total HCl and chlorine concentration, dry basis, ppmv

C_m = actual TOC, total organic HAP, or total HCl and chlorine concentration measured at control device outlet, dry basis, ppmv

V_a = total volumetric flow rate of affected streams vented to the control device

V_s = total volumetric flow rate of supplemental gases.

(b) *Test methods and conditions.* When testing is conducted to measure emissions from an affected source, the test methods specified in paragraphs (b)(1) through (9) of this section shall be used. Compliance tests shall be performed under conditions specified in paragraphs (b)(10) and (11) of this section.

(1) Method 1 or 1A of appendix A of 40 CFR part 60 shall be used for sample and velocity traverses.

(2) Method 2, 2A, 2C, or 2D of appendix A of 40 CFR part 60 shall be used for velocity and volumetric flow rates.

(3) Method 3 of appendix A of 40 CFR part 60 shall be used for gas analysis.

(4) Method 4 of appendix A of 40 CFR part 60 shall be used for stack gas moisture.

(5) Concentration measurements shall be adjusted to negate the dilution effects of introducing nonaffected gaseous streams into the vent streams prior to control or measurement. The following methods are specified for concentration measurements of organic compounds:

(i) Method 18 of appendix A of 40 CFR part 60 may be used to determine HAP concentration in any control device efficiency determination.

(ii) Method 25 of appendix A of 40 CFR part 60 may be used to determine total gaseous nonmethane organic concentration for control efficiency determinations in combustion devices.

(iii) Method 25A of appendix A of 40 CFR part 60 may be used to determine the HAP or TOC concentration for control device efficiency determinations under the conditions specified in Method 25 of appendix A of 40 CFR part 60 for direct measurement of an effluent with a flame ionization detector, or in demonstrating compliance with the 20 ppmv TOC outlet standard. If Method 25A of appendix A of 40 CFR part 60 is used to determine the concentration of TOC for the 20 ppmv standard, the instrument shall be calibrated on methane or the predominant HAP. If calibrating on the predominant HAP, the use of Method 25A of appendix A of 40 CFR part 60 shall comply with paragraphs (b)(5)(i)(A) through (C) of this section.

(A) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A, shall be the single organic HAP representing the largest percent by volume.

(B) The use of Method 25A, 40 CFR part 60, appendix A, is acceptable if the response from the high level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(C) The span value of the analyzer must be less than 100 ppmv.

(6) The methods in either paragraph (b)(6)(i) or (ii) of this section shall be used to determine the concentration, in mg/dscm, of total HCl and chlorine. Concentration measurements shall be adjusted to negate the dilution effects of introducing nonaffected gaseous streams into the vent streams prior to control or measurement.

(i) Method 26 or 26A of 40 CFR part 60, appendix A.

(ii) Any other method if the method or data have been validated according to the applicable procedures of Method 301 of appendix A of this part.

(7) Method 5 of appendix A of 40 CFR part 60 shall be used to determine the concentration of particulate matter in exhaust gas streams from bag dumps and product dryers.

(8) Wastewater analysis shall be conducted in accordance with § 63.144(b)(5)(i) through (iii) or as specified in paragraph (b)(8)(i) or (ii) of this section.

(i) As an alternative to the methods specified in § 63.144(b)(5)(i), an owner or operator may conduct wastewater analyses using Method 1666 or 1671 of 40 CFR part 136, appendix A, and comply with the sampling protocol requirements specified in § 63.144(b)(5)(ii). The validation requirements specified in § 63.144(b)(5)(iii) do not apply if an owner or operator uses Method 1666 or 1671 of 40 CFR part 136, appendix A.

(ii) As an alternative to the methods specified in § 63.144(b)(5)(i), an owner or operator may use procedures specified in Method 8260 or 8270 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication No. SW–846, Third Edition, September 1986, as amended by Update I, November 15, 1992. An owner or operator also may use any more recent, updated version of Method 8260 or 8270 approved by EPA. For the purpose of using Method 8260 or 8270 to comply with this subpart, the owner or operator must maintain a formal quality assurance program consistent with either Section 8 of Method 8260 or Method 8270. This program must include the elements related to measuring the concentrations of volatile compounds that are specified in paragraphs (b)(8)(ii)(A) through (C) of this section.

(A) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, and preparation steps.

(B) Documentation of specific quality assurance procedures followed during sampling, sample preparation, sample introduction, and analysis.

(C) Measurement of the average accuracy and precision of the specific procedures, including field duplicates and field spiking of the material source before or during sampling with compounds having similar chemical characteristics to the target analytes.

(9) Method 22 of appendix A of 40 CFR part 60 shall be used to determine visible emissions from flares.

(10) *Testing conditions for continuous processes.* Testing of process vents on equipment operating as part of a continuous process shall consist of three one-hour runs. Gas stream volumetric flow rates shall be measured every 15 minutes during each 1-hour run. Organic HAP concentration shall be determined from samples collected in an integrated sample over the duration of each one-hour test run, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. For continuous gas streams, the emission rate used to determine compliance shall be the average emission rate of the three test runs.

(11) *Testing conditions for batch processes.* Testing of emissions on equipment where the flow of gaseous emissions is intermittent (batch operations) shall be conducted at absolute peak-case conditions or hypothetical peak-case conditions, as specified in paragraphs (b)(11)(i) and (ii) of this section, respectively. Gas stream volumetric flow rates shall be measured at 15-minute intervals. Organic HAP, TOC, or HCl and chlorine concentration shall be determined from samples collected in an integrated sample over the duration of the test, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. In all cases, a site-specific test plan shall be submitted to the Administrator for approval prior to testing in accordance with §63.7(c). The test plan shall include the emissions profile described in paragraph (b)(11)(iii) of this section. The term ''HAP mass loading'' as used in paragraphs (b)(11)(i) through (iii) of this section refers to the class of HAP, either organic or HCl and chlorine, that the control device is intended to control.

(i) *Absolute peak-case.* If the most challenging conditions for the control device occur under maximum HAP load, the absolute peak-case conditions shall be characterized by the criteria presented in paragraph (b)(11)(i)(A) or (B) of this section. Otherwise, absolute peak-case conditions are defined by the conditions in paragraph (b)(11)(i)(C) of this section.

(A) The period in which the inlet to the control device will contain at least 50 percent of the maximum HAP mass load that may be vented to the control device over any 8-hour period. An emission profile as described in paragraph (b)(11)(iii)(A) of this section shall be used to identify the 8-hour period that includes the maximum projected HAP load.

(B) A 1-hour period of time in which the inlet to the control device will contain the highest hourly HAP mass loading rate that may be vented to the control device. An emission profile as described in paragraph (b)(11)(iii)(A) of this section shall be used to identify the 1-hour period of maximum HAP loading.

(C) The period of time when a condition other than the maximum HAP load is most challenging for the control device. These conditions include, but are not limited to the following:

(*1*) Periods when the streams contain the highest combined VOC and HAP hourly load, as described by the emission profiles in paragraph (b)(11)(iii) of this section; or

(*2*) Periods when the streams contain HAP constituents that approach the limits of solubility for scrubbing media; or

(*3*) Periods when the streams contain HAP constituents that approach the limits of adsorptivity for carbon adsorption systems.

(ii) *Hypothetical peak-case.* Hypothetical peak-case conditions are simulated test conditions that, at a minimum, contain the highest total average hourly HAP load of emissions that would be predicted to be vented to the control device from the emissions profile described in either paragraph (b)(11)(iii)(B) or (C) of this section.

(iii) *Emissions profile.* The owner or operator may choose to perform tests only during those periods of the peak-case episode(s) that the owner or operator selects to control as part of achieving the required emission reduction. Except as specified in paragraph (b)(11)(iii)(D) of this section, the owner or operator shall develop an emission profile for the vent to the control device that describes the characteristics of the vent stream at the inlet to the control device under either absolute or hypothetical peak-case conditions. The emissions profile shall be developed based on the applicable procedures described in paragraphs (b)(11)(iii)(A) through (C) of this section, as required by paragraphs (b)(11)(i) and (ii) of this section.

(A) *Emissions profile by process.* The emissions profile must consider all emission episodes that could contribute to the vent stack for a period of time that is sufficient to include all processes venting to the stack and shall consider production scheduling. The profile shall describe the HAP load to the device that equals the highest sum of emissions from the episodes that can vent to the control device during the period of absolute peak-case conditions specified in paragraph (b)(11)(i)(A), (B), or (C) as appropriate. Emissions per episode shall be calculated using the procedures specified in paragraph (c)(2) of this section. When complying with paragraph (b)(11)(i)(B) of this section, emissions per episode shall be divided by the duration of the episode if the duration of the episode is longer than 1 hour.

(B) *Emission profile by equipment.* The emission profile must consist of emissions that meet or exceed the highest hourly HAP load that would be expected under actual processing conditions. The profile shall describe equipment configurations used to generate the emission events, volatility of materials processed in the equipment, and the rationale used to identify and characterize the emission events. The emissions may be based on using a compound more volatile than compounds actually used in the process(es), and the emissions may be generated from all equipment in the process(es) or only selected equipment.

(C) *Emission profile by capture and control device limitation.* The emission profile shall consider the capture and control system limitations and the highest hourly emissions that can be routed to the control device, based on maximum flow rate and concentrations possible because of limitations on conveyance and control equipment (e.g., fans, LEL alarms and safety bypasses).

(D) *Exemptions.* The owner or operator is not required to develop an emission profile under the circumstances described in paragraph (b)(11)(iii)(D)(*1*) or (*2*) of this section.

(*1*) If all process vents for a process are controlled using a control device or series of control devices that reduce HAP emissions by 98 percent or more, no other emission streams are vented to the control device when it is used to control emissions from the subject process, and the performance test is conducted over the entire batch cycle.

(*2*) If a control device is used to comply with the outlet concentration limit for process vent emission streams from a single process (but not necessarily all of the process vents from that process), no other emission streams are vented to the control device while it is used to control emissions from the subject process, and the performance test is conducted over the entire batch cycle.

(iv) *Test duration.* Three runs, at a minimum of 1 hour each, are required for performance testing. When complying with a percent reduction standard, each test run may be a maximum of either 24 hours or the duration of the longest batch controlled by the control device, whichever is shorter, and each run must include the same absolute or hypothetical peak-case conditions, as defined in paragraph (b)(11)(i) or (ii) of this section. When complying with an outlet concentration limit, each run must include the same absolute or hypothetical peak-case conditions, as defined in paragraph (b)(11)(i) or (ii) of this section, and the duration of each run may not exceed the duration of the applicable peak-case condition.

(c) *Initial compliance with process vent provisions.* The owner or operator of an affected source shall demonstrate compliance with the process vent standards in § 63.1362(b) using the procedures described in paragraphs (c)(1) through (3) of this section.

(1) Compliance with the process vent standards in § 63.1362(b) shall be demonstrated in accordance with the provisions specified in paragraphs (c)(1)(i) through (viii) of this section.

(i) Initial compliance with the emission limit cutoffs in § 63.1362(b)(2)(i) and (b)(4)(i) is demonstrated when the uncontrolled organic HAP emissions from the sum of all process vents within a process are less than or equal to 0.15 Mg/yr. Uncontrolled HAP emissions shall be determined using the procedures described in paragraph (c)(2) of this section.

(ii) Initial compliance with the emission limit cutoffs in § 63.1362(b)(3)(i) and (b)(5)(i) is demonstrated when the uncontrolled HCl and Cl_2 emissions from the sum of all process vents within a process are less than or equal to 6.8 Mg/yr. Initial compliance with the emission limit cutoffs in § 63.1362(b)(5)(ii) and (iii) is demonstrated when the uncontrolled HCl and Cl_2 emissions are greater than or equal to 6.8 Mg/yr or greater than or equal to 191 Mg/yr, respectively. Uncontrolled emissions shall be determined using the procedures described in paragraph (c)(2) of this section.

(iii) Initial compliance with the organic HAP percent reduction requirements specified in § 63.1362(b)(2)(ii), (iii), and (b)(4)(ii) is demonstrated by determining controlled HAP emissions using the procedures described in paragraph (c)(3) of this section, determining uncontrolled HAP emissions using the procedures described in paragraph (c)(2) of this section, and calculating the applicable percent reduction. As an alternative, if the conditions specified in paragraph (b)(11)(iii)(D)(*1*) of this section are met, initial compliance may be demonstrated by showing the control device reduces emissions by 98 percent by weight or greater using the procedures specified in paragraph (c)(3) of this section.

(iv) Initial compliance with the HCl and Cl_2 percent reduction requirements specified in § 63.1362(b)(3)(ii), (b)(5)(ii), and (b)(5)(iii) is demonstrated by determining controlled emissions of HCl and Cl_2 using the procedures described in paragraph (c)(3) of this section, determining uncontrolled emissions of HCl and Cl_2 using the procedures described in paragraph (c)(2) of this section, and calculating the applicable percent reduction.

(v) Initial compliance with the outlet concentration limits in § 63.1362(b)(2)(iv)(A), (b)(3)(ii), (b)(4)(ii)(A), (b)(5)(ii) and (iii) is demonstrated when the outlet TOC or total organic HAP concentration is 20 ppmv or less and the outlet HCl and chlorine concentration is 20 ppmv or less. The owner or operator shall demonstrate compliance by fulfilling the requirements in paragraph (a)(6) of this section. If an owner or operator elects to develop an emissions profile by process as described in paragraph (b)(11)(iii)(A) of this section, uncontrolled emissions shall be determined using the procedures in paragraph (c)(2) of this section.

(vi) Initial compliance with the alternative standard in § 63.1362(b)(6) is demonstrated by fulfilling the requirements in paragraph (a)(5) of this section.

(vii) Initial compliance when using a flare is demonstrated by fulfilling the requirements in paragraph (a)(3) of this section.

(viii) No initial compliance demonstration is required for control devices specified in § 63.1362(l).

(2) *Uncontrolled emissions.* The owner or operator referred to from paragraphs (c)(1)(i) through (v) of this section shall calculate uncontrolled emissions according to the procedures described in paragraph (c)(2)(i) or (ii) of this section, as appropriate.

(i) *Emission estimation procedures.* The owner or operator shall determine uncontrolled HAP emissions using emission measurements and/or calculations for each batch emission episode according to the engineering evaluation methodology in paragraphs (c)(2)(i)(A) through (H) of this section.

(A) Individual HAP partial pressures in multicomponent systems shall be determined in accordance with the methods specified in paragraphs (c)(2)(i)(A)(*1*) through (*3*) of this section. Chemical property data may be obtained from standard references.

(*1*) If the components are miscible in one another, use Raoult's law to calculate the partial pressures;

(*2*) If the solution is a dilute aqueous mixture, use Henry's law constants to calculate partial pressures;

(*3*) If Raoult's law or Henry's law are not appropriate or available, use any of the methods specified in paragraphs (c)(2)(i)(A) (*3*)(*i*) through (*iii*) of this section.

(*i*) Use experimentally obtained activity coefficients;

(*ii*) Use models such as the group-contribution models to predict activity coefficients;

(*iii*) Assume the components of the system behave independently and use the summation of all vapor pressures from the HAP as the total HAP partial pressure;

(B) *Charging or filling.* Emissions from vapor displacement due to transfer of material to a vessel shall be calculated using Equation 9 of this subpart:

$$E = \frac{(V)}{(R)(T)} \times \sum_{i=1}^{n} (P_i)(MW_i) \qquad \text{(Eq. 9)}$$

Where:

E = mass of HAP emitted

P_i = partial pressure of the individual HAP

V = volume of gas displaced from the vessel

R = ideal gas law constant

T = temperature of the vessel vapor space; absolute

MW_i = molecular weight of the individual HAP

(C) *Purging.* Emissions from purging shall be calculated using Equation 10 of this subpart, except that for purge flow rates greater than 100 scfm, the mole fraction of HAP will be assumed to be 25 percent of the saturated value.

$$E = \sum_{i=1}^{n} P_i MW_i \times \left(\frac{(V)(t)}{(R)(T)}\right) \times \frac{P_T}{P_T - \sum_{j=1}^{m} (P_j)} \qquad \text{(Eq. 10)}$$

Where:

E = mass of HAP emitted

V = purge flow rate at the temperature and pressure of the vessel vapor space

R = ideal gas law constant

T = temperature of the vessel vapor space; absolute

P_i = partial pressure of the individual HAP

P_j = partial pressure of individual condensable compounds (including HAP)

P_T = pressure of the vessel vapor space

MW_i = molecular weight of the individual HAP

t = time of purge

n = number of HAP compounds in the emission stream

m = number of condensable compounds (including HAP) in the emission stream.

(D) *Heating.* Emissions caused by heating the contents of a vessel to a temperature less than the boiling point shall be calculated using the procedures in either paragraph (c)(2)(i)(D)(*1*), (*2*), or (*4*) of this section, as appropriate. If the contents of a vessel are heated to the boiling point, emissions while boiling are assumed to be zero if the owner or operator is complying with the provisions in paragraph (d)(2)(i)(C)(*3*) of this section.

(*1*) If the final temperature to which the vessel contents are heated is lower than 50 K below the boiling point of the HAP in the vessel, then emissions shall be calculated using Equations 11 through 14 of this subpart.

(*i*) The mass of HAP emitted per episode shall be calculated using Equation 11 of this subpart:

$$E = \frac{\dfrac{\sum_{i=1}^{n}(P_i)_{T1}}{Pa_1} + \dfrac{\sum_{i=1}^{n}(P_i)_{T2}}{Pa_2}}{2} \times \Delta\eta \times MW_{HAP} \qquad \text{(Eq. 11)}$$

Where:

E = mass of HAP vapor displaced from the vessel being heated

$(P_i)_{Tn}$ = partial pressure of each HAP in the vessel headspace at initial (n = 1) and final (n = 2) temperatures

Pa_1 = initial noncondensable gas pressure in the vessel, as calculated using Equation 13 of this subpart

Pa_2 = final noncondensable gas pressure in the vessel, as calculated using Equation 13 of this subpart

ΔH = number of moles of noncondensable gas displaced, as calculated using Equation 12 of this subpart

MW_{HAP} = The average molecular weight of HAP present in the vessel, as calculated using Equation 14 of this subpart:

n = number of HAP compounds in the displaced vapor

(*ii*) The moles of noncondensable gas displaced shall be calculated using Equation 12 of this subpart:

$$\Delta\eta = \frac{V}{R}\left[\left(\frac{Pa_1}{T_1}\right) - \left(\frac{Pa_2}{T_2}\right)\right] \qquad \text{(Eq. 12)}$$

Where:

ΔH = number of moles of noncondensable gas displaced

V = volume of free space in the vessel

R = ideal gas law constant

Pa_1 = initial noncondensable gas pressure in the vessel, as calculated using Equation 13 of this subpart

Pa_2 = final noncondensable gas pressure in the vessel, as calculated using Equation 13 of this subpart

T_1 = initial temperature of vessel contents, absolute

T_2 = final temperature of vessel contents, absolute

(*iii*) The initial and final pressure of the noncondensable gas in the vessel shall be calculated according to Equation 13 of this subpart:

$$Pa_n = Pa_{atm} - \sum_{j=1}^{m}(P_j)_{Tn} \qquad \text{(Eq. 13)}$$

Where:

Pa_n = partial pressure of noncondensable gas in the vessel headspace at initial (n = 1) and final (n = 2) temperatures

P_{atm} = atmospheric pressure

$(P_j)_{Tn}$ = partial pressure of each condensable volatile organic compound (including HAP) in the vessel headspace at the initial temperature (n = 1) and final (n = 2) temperature

(*iv*) The average molecular weight of HAP in the displaced gas shall be calculated using Equation 14 of this subpart:

$$MW_{HAP} = \sum_{i=1}^{n} \frac{\left((P_i)_{T_1} + (P_i)_{T_2}\right)MW_i}{\sum_{i=1}^{n}\left((P_i)_{T_1} + (P_i)_{T_2}\right)} \qquad \text{(Eq. 14)}$$

Where:

MW_{HAP} = average molecular weight of HAP in the displaced gas

$(P_i)_{Tn}$ = partial pressure of each HAP in the vessel headspace at the initial (T_1) and final (T_2) temperatures

MW_i = molecular weight of each HAP

n = number of HAP compounds in the emission stream

(*2*) If the vessel contents are heated to a temperature greater than 50 K below the boiling point, then emissions from the heating of a vessel shall be calculated as the sum of the emissions calculated in accordance with paragraphs (c)(2)(i)(D)(*2*)(*i*) and (*ii*) of this section.

(*i*) For the interval from the initial temperature to the temperature 50 K below the boiling point, emissions shall be calculated using Equation 11 of this subpart, where T_2 is the temperature 50 K below the boiling point.

(*ii*) For the interval from the temperature 50 K below the boiling point to the final temperature, emissions shall be calculated as the summation of emissions for each 5 K increment, where the emission for each increment shall be calculated using Equation 11 of this subpart. If the final temperature of the heatup is lower than 5 K below the boiling point, the final temperature for the last increment shall be the final temperature of the heatup, even if the last increment is less than 5 K. If the final temperature of the heatup is higher than 5 K below the boiling point, the final temperature for the last increment shall be the temperature 5 K below the boiling point, even if the last increment is less than 5 K.

(*3*) While boiling, the vessel must be operated with a properly operated process condenser. An initial demonstration that a process condenser is properly operated is required for vessels that operate process condensers without secondary condensers that are air pollution control devices. The owner or operator must either measure the condenser exhaust gas temperature and show it is less than the boiling point of the substance(s) in the vessel, or perform a material balance around the vessel and condenser to show that at least 99 percent of the material vaporized while boiling is condensed. Uncontrolled emissions are assumed to be zero under these conditions. The initial demonstration shall be conducted for all appropriate operating scenarios and documented in the Notification of Compliance Status report as specified in § 63.1368(f).

(*4*)(*i*) As an alternative to the procedures described in paragraphs (c)(2)(i)(D)(*1*) and (*2*) of this section, emissions caused by heating a vessel to any temperature less than the boiling point may be calculated using Equation 15 of this subpart.

$$E = MW_{HAP} \times \left(N_{avg} \times 1n \left(\frac{P_T - \sum_{i=1}^{m} \left(P_{i,1} \right)}{P_T - \sum_{i=1}^{m} \left(P_{i,2} \right)} \right) - \left(n_{HAP,2} - n_{HAP,1} \right) \right) \qquad \text{(Eq. 15)}$$

Where:

E = mass of HAP vapor displaced from the vessel being heated

N_{avg} = average gas space molar volume during the heating process, as calculated using Equation 16 of this subpart

P_T = total pressure in the vessel

$P_{i,1}$ = partial pressure of the individual HAP compounds at T_1

$P_{i,2}$ = partial pressure of the individual HAP compounds at T_2

MW_{HAP} = average molecular weight of the HAP compounds, as calculated using Equation 14 of this subpart

$n_{HAP,1}$ = number of moles of total HAP in the vessel headspace at T_1

$n_{HAP,2}$ = number of moles of total HAP in the vessel headspace at T_2

m = number of HAP compounds in the emission stream.

(*ii*) The average gas space molar volume during the heating process is calculated using Equation 16 of this subpart.

$$N_{avg} = \frac{VP_T}{2R} \left(\frac{1}{T_1} + \frac{1}{T_2} \right) \qquad \text{(Eq. 16)}$$

Where:

N_{avg} = average gas space molar volume during the heating process

V = volume of free space in vessel

P_T = total pressure in the vessel

R = ideal gas law constant

T_1 = initial temperature of the vessel contents, absolute

T_2 = final temperature of the vessel contents, absolute

(*iii*) The difference in the number of moles of total HAP in the vessel headspace between the initial and final temperatures is calculated using Equation 17 of this subpart.

$$\left(n_{HAP,2} - n_{HAP,1}\right) = \frac{V}{(R)(T_2)}\sum_{i=1}^{n} P_{i,2} - \frac{V}{(R)(T_1)}\sum_{i=1}^{n} P_{i,1} \quad \text{(Eq. 17)}$$

Where:

$n_{HAP,2}$ = number of moles of total HAP in the vessel headspace at T_2
$n_{HAP,1}$ = number of moles of total HAP in the vessel headspace at T_1
V = volume of free space in vessel
R = ideal gas law constant
T_1 = initial temperature of the vessel contents, absolute
T_2 = final temperature of the vessel contents, absolute
$P_{i,1}$ = partial pressure of the individual HAP compounds at T_1
$P_{i,2}$ = partial pressure of the individual HAP compounds at T_2
n = number of HAP compounds in the emission stream.

(E) *Depressurization.* Emissions from depressurization shall be calculated using the procedures in paragraphs (c)(2)(i)(E)(*1*) through (*5*) of this section. Alternatively, the owner or operator may elect to calculate emissions from depressurization using the procedures in paragraph (c)(2)(i)(E)(*6*) of this section.

(*1*) The moles of HAP vapor initially in the vessel are calculated using Equation 18 of this subpart:

$$n_{HAP} = \frac{V}{R\,T} \times \sum_{i=1}^{n}\left(P_i\right) \quad \text{(Eq. 18)}$$

Where:

n_{HAP}=moles of HAP vapor in the vessel
P_i=partial pressure of each HAP in the vessel vapor space
V=free volume in the vessel being depressurized
R=ideal gas law constant
T=absolute temperature in vessel
n=number of HAP compounds in the emission stream

(*2*) The initial and final moles of noncondensable gas present in the vessel are calculated using Equations 19 and 20 of this subpart:

$$n_1 = \frac{VP_{nc_1}}{RT} \quad \text{(Eq. 19)}$$

$$n_2 = \frac{VP_{nc_2}}{RT} \quad \text{(Eq. 20)}$$

Where:

n_1=initial number of moles of noncondensable gas in the vessel
n_2=final number of moles of noncondensable gas in the vessel
V=free volume in the vessel being depressurized
P_{nc1}=initial partial pressure of the noncondensable gas, as calculated using Equation 21 of this subpart
P_{nc2}=final partial pressure of the noncondensable gas, as calculated using Equation 22 of this subpart
R=ideal gas law constant
T=temperature, absolute

(*3*) The initial and final partial pressures of the noncondensable gas in the vessel are determined using Equations 21 and 22 of this subpart.

$$P_{ncl} = P_l - \sum_{j=1}^{m}\left(P_j*\right)\left(x_j\right) \quad \text{(Eq. 21)}$$

$$P_{nc2} = P_2 - \sum_{j=1}^{m}\left(P_j*\right)\left(x_j\right) \quad \text{(Eq. 22)}$$

Where:

P_{nc1} = initial partial pressure of the noncondensable gas
P_{nc2} = final partial pressure of the noncondensable gas
P_1 = initial vessel pressure
P_2 = final vessel pressure
P_j^* = vapor pressure of each condensable compound (including HAP) in the emission stream
x_j = mole fraction of each condensable compound (including HAP) in the liquid phase
m = number of condensable compounds (including HAP) in the emission stream.

(*4*) The moles of HAP emitted during the depressurization are calculated by taking an approximation of the average ratio of moles of HAP to moles of noncondensable and multiplying by the total moles of noncondensables released during the depressurization, using Equation 23 of this subpart:

$$n_{HAP,e} = \frac{\left(\frac{n_{HAP,1}}{n_1} + \frac{n_{HAP,2}}{n_2}\right)}{2}\left[n_1 - n_2\right] \qquad \text{(Eq. 23)}$$

Where:

$n_{HAP,e}$ = moles of HAP emitted

$n_{HAP,1}$ = moles of HAP vapor in vessel at the initial pressure, as calculated using Equation 18 of this subpart

$n_{HAP,2}$ = moles of HAP vapor in vessel at the final pressure, as calculated using Equation 18 of this subpart

n_1 = initial number of moles of noncondensable gas in the vessel, as calculated using Equation 19 of this subpart

n_2 = final number of moles of noncondensable gas in the vessel, as calculated using Equation 19 of this subpart.

(*5*) Use Equation 24 of this subpart to calculate the mass of HAP emitted:

$$E = n_{HAP,e} * MW_{HAP} \qquad \text{(Eq. 24)}$$

Where:

E=mass of HAP emitted

$n_{HAP,e}$=moles of HAP emitted, as calculated using Equation 23 of this subpart

MW_{HAP}=average molecular weight of the HAP as calculated using Equation 14 of this subpart

(*6*) As an alternative to the procedures in paragraphs (c)(2)(i)(E)(1) through (5) of this section, emissions from depressurization may be calculated using Equation 25 of this subpart:

$$E = \frac{V}{(R)\,(T)} \times \ln\left(\frac{P_1 - \sum_{j=1}^{m}\left(P_j\right)}{P_2 - \sum_{j=1}^{m}\left(P_j\right)}\right) \times \sum_{i=1}^{n}\left(P_i\right)\,\left(MW_i\right) \qquad \text{(Eq. 25)}$$

Where:

V=free volume in vessel being depressurized

R=ideal gas law constant

T=temperature of the vessel, absolute

P_1=initial pressure in the vessel

P_2=final pressure in the vessel

P_i=partial pressure of the individual HAP compounds

P_j=partial pressure of individual condensable VOC compounds (including HAP)

MW_i=molecular weight of the individual HAP compounds

n=number of HAP compounds in the emission stream

m=number of condensable VOC compounds (including HAP) in the emission stream

(F) *Vacuum systems.* Calculate emissions from vacuum systems using Equation 26 of this subpart:

$$E = \frac{\left(MW_{HAP}\right)(La)(t)}{MW_{nc}}\left(\frac{\sum_{i=1}^{n} P_i}{P_T - \sum_{j=1}^{m} P_j}\right) \qquad \text{(Eq. 26)}$$

Where:

E = mass of HAP emitted

P_T = absolute pressure of receiving vessel or ejector outlet conditions, if there is no receiver

P_i = partial pressure of individual HAP at the receiver temperature or the ejector outlet conditions

P_j = partial pressure of individual condensable compounds (including HAP) at the receiver temperature or the ejector outlet conditions

La = total air leak rate in the system, mass/time

MW_{nc} = molecular weight of noncondensable gas

t = time of vacuum operation

MW_{HAP} = average molecular weight of HAP in the emission stream, as calculated using Equation 14 of this subpart, with HAP partial pressures calculated at the temperature of the receiver or ejector outlet, as appropriate

n = number of HAP components in the emission stream

m = number of condensable compounds (including HAP) in the emission stream.

(G) *Gas evolution*. Emissions from gas evolution shall be calculated using Equation 10 of this subpart with V calculated using Equation 27 of this subpart:

$$V = \frac{(W_g)(R)(T)}{(P_T)(MW_g)} \qquad \text{(Eq. 27)}$$

Where:

V=volumetric flow rate of gas evolution

W_g=mass flow rate of gas evolution

R=ideal gas law constant

T=temperature at the exit, absolute

P_T=vessel pressure

MW_g=molecular weight of the evolved gas

(H) *Air drying*. Use Equation 28 of this subpart to calculate emissions from air drying:

$$E = B \times \left(\frac{PS_1}{100 - PS_1} - \frac{PS_2}{100 - PS_2} \right) \qquad \text{(Eq. 28)}$$

Where:

E=mass of HAP emitted

B=mass of dry solids

PS_1=HAP in material entering dryer, weight percent

PS_2=HAP in material exiting dryer, weight percent.

(ii) *Engineering assessments*. The owner or operator shall conduct an engineering assessment to determine uncontrolled HAP emissions for each emission episode that is not due to vapor displacement, purging, heating, depressurization, vacuum systems, gas evolution, or air drying. For a given emission episode caused by any of these seven types of activities, the owner or operator also may request approval to determine uncontrolled HAP emissions based on an engineering assessment. Except as specified in paragraph (c)(2)(ii)(A) of this section, all data, assumptions, and procedures used in the engineering assessment shall be documented in the Precompliance plan in accordance with § 63.1367(b). An engineering assessment includes, but is not limited to, the information and procedures described in paragraphs (c)(2)(ii)(A) through (D) of this section.

(A) Test results, provided the tests are representative of current operating practices at the process unit. For process vents without variable emission stream characteristics, an engineering assessment based on the results of a previous test may be submitted in the Notification of Compliance Status report instead of the Precompliance plan. Results from a previous test of process vents with variable emission stream characteristics will be acceptable in place of values estimated using the procedures specified in paragraph (c)(2)(i) of this section if the test data show a greater than 20 percent discrepancy between the test value and the estimated value, and the results of the engineering assessment shall be included in the Notification of Compliance Status report. For other process vents with variable emission stream characteristics, engineering assessments based on the results of a previous test must be submitted in the Precompliance plan. For engineering assessments based on new tests, the owner or operator must comply with the test notification requirements in § 63.1368(m), and the results of the engineering assessment may be submitted in the Notification of Compliance Status report rather than the Precompliance plan.

(B) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(C) Maximum flow rate, HAP emission rate, concentration, or other relevant parameter specified or implied within a permit limit applicable to the process vent.

(D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(*1*) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations;

(*2*) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities; and

(*3*) Estimation of HAP concentrations based on saturation conditions.

(3) *Controlled emissions.* Except for condensers, the owner or operator shall determine controlled emissions using the procedures in either paragraph (c)(3)(i) or (ii) of this section, as applicable. For condensers, controlled emissions shall be calculated using the emission estimation equations described in paragraph (c)(3)(iii) of this section. The owner or operator is not required to calculate controlled emissions from devices described in paragraph (a)(4) of this section or from flares for which compliance is demonstrated in accordance with paragraph (a)(3) of this section. If the owner or operator is complying with an outlet concentration standard and the control device uses supplemental gases, the outlet concentrations shall be corrected in accordance with the procedures described in paragraph (a)(7) of this section.

(i) *Small control devices, except condensers.* Controlled emissions for each process vent that is controlled using a small control device, except for a condenser, shall be determined by using the design evaluation described in paragraph (c)(3)(i)(A) of this section, or by conducting a performance test in accordance with paragraph (c)(3)(ii) of this section.

(A) *Design evaluation.* The design evaluation shall include documentation demonstrating that the control device being used achieves the required control efficiency under absolute or hypothetical peak-case conditions, as determined from the emission profile described in paragraph (b)(11)(iii) of this section. The control efficiency determined from this design evaluation shall be applied to uncontrolled emissions to estimate controlled emissions. The documentation must be conducted in accordance with the provisions in paragraph (a)(1) of this section. The design evaluation shall also include the value(s) and basis for the parameter(s) monitored under § 63.1366.

(B) Whenever a small control device becomes a large control device, the owner or operator must comply with the provisions in paragraph (c)(3)(ii) of this section and submit the test report in the next Periodic report.

(ii) *Large control devices, except condensers.* Controlled emissions for each process vent that is controlled using a large control device, except for a condenser, shall be determined by applying the control efficiency of the large control device to the estimated uncontrolled emissions. The control efficiency shall be determined by conducting a performance test on the control device as described in paragraphs (c)(3)(ii)(A) through (C) of this section, or by using the results of a previous performance test as described in paragraph (c)(3)(ii)(D) of this section. If the control device is intended to control only HCl and chlorine, the owner or operator may assume the control efficiency of organic HAP is 0 percent. If the control device is intended to control only organic HAP, the owner or operator may assume the control efficiency for HCl and chlorine is 0 percent.

(A) Performance test measurements shall be conducted at both the inlet and outlet of the control device for TOC, total organic HAP, and total HCl and chlorine, as applicable, using the test methods and procedures described in paragraph (b) of this section. Concentrations shall be calculated from the data obtained through emission testing according to the procedures in paragraph (a)(2) of this section.

(B) Performance testing shall be conducted under absolute or hypothetical peak-case conditions, as defined in paragraphs (b)(11)(i) and (ii) of this section.

(C) The owner or operator may elect to conduct more than one performance test on the control device for the purpose of establishing more than one operating condition at which the control device achieves the required control efficiency.

(D) The owner or operator is not required to conduct a performance test for any control device for which a previous performance test was conducted, provided the test was conducted using the same procedures specified in paragraphs (b)(1) through (11) of this section over conditions typical of the absolute or hypothetical peak-case, as defined in paragraphs (b)(11)(i) and (ii) of this section. The results of the previous performance test shall be used to demonstrate compliance.

(iii) *Condensers*. The owner or operator using a condenser as a control device shall determine controlled emissions for each batch emission episode according to the engineering methodology in paragraphs (c)(3)(iii)(A) through (G) of this section. The owner or operator must establish the maximum outlet gas temperature and calculate the controlled emissions using this temperature in the applicable equation. Individual HAP partial pressures shall be calculated as specified in paragraph (c)(2)(i) of this section.

(A) Emissions from vapor displacement due to transfer of material to a vessel shall be calculated using Equation 9 of this subpart with T set equal to the temperature of the receiver and the HAP partial pressures determined at the temperature of the receiver.

(B) Emissions from purging shall be calculated using Equation 10 of this subpart with T set equal to the temperature of the receiver and the HAP partial pressures determined at the temperature of the receiver.

(C) Emissions from heating shall be calculated using Equation 29 of this subpart. In Equation 29 of this subpart, $\Delta\eta$ is equal to the number of moles of noncondensable displaced from the vessel, as calculated using Equation 12 of this subpart. In Equation 29 of this subpart, the HAP average molecular weight shall be calculated using Equation 14 with the HAP partial pressures determined at the temperature of the receiver.

$$E = \Delta\eta \times \frac{\sum_{i=1}^{n} P_i}{P_T - \sum_{j=1}^{m} P_j} \times MW_{HAP} \qquad \text{(Eq. 29)}$$

Where:

E=mass of HAP emitted

$\Delta\eta$=moles of noncondensable gas displaced

P_T=pressure in the receiver

P_i=partial pressure of the individual HAP at the receiver temperature

P_j=partial pressure of the individual condensable VOC (including HAP) at the receiver temperature

n=number of HAP compounds in the emission stream

MW_{HAP}=the average molecular weight of HAP in vapor exiting the receiver, as calculated using Equation 14 of this subpart

m=number of condensable VOC (including HAP) in the emission stream

(D)(*1*) Emissions from depressurization shall be calculated using Equation 30 of this subpart.

$$E = \left(V_{nc1} - V_{nc2}\right) \times \frac{\sum_{i=1}^{n}\left(P_i\right)}{P_T - \sum_{j=1}^{m}\left(P_j\right)} \times \frac{P_T}{RT} \times MW_{HAP} \qquad \text{(Eq. 30)}$$

Where:

E=mass of HAP vapor emitted

V_{nc1}=initial volume of noncondensable in the vessel, corrected to the final pressure, as calculated using Equation 31 of this subpart

V_{nc2}=final volume of noncondensable in the vessel, as calculated using Equation 32 of this subpart

P_i=partial pressure of each individual HAP at the receiver temperature

P_j=partial pressure of each condensable VOC (including HAP) at the receiver temperature

P_T=receiver pressure

T=temperature of the receiver, absolute

R=ideal gas law constant

MW_{HAP}=the average molecular weight of HAP calculated using Equation 14 of this subpart with partial pressures determined at the receiver temperature

n=number of HAP compounds in the emission stream

m=number of condensable VOC (including HAP) in the emission stream

(*2*) The initial and final volumes of noncondensable gas present in the vessel, adjusted to the pressure of the receiver, are calculated using Equations 31 and 32 of this subpart.

$$V_{nc1} = \frac{VP_{nc_1}}{P_T} \qquad \text{(Eq. 31)}$$

$$V_{nc2} = \frac{VP_{nc_2}}{P_T} \qquad \text{(Eq. 32)}$$

Where:

V_{nc1}=initial volume of noncondensable gas in the vessel

V_{nc2}=final volume of noncondensable gas in the vessel

V=free volume in the vessel being depressurized

P_{nc1}=initial partial pressure of the noncondensable gas, as calculated using Equation 33 of this subpart

P_{nc2}=final partial pressure of the noncondensable gas, as calculated using Equation 34 of this subpart

P_T=pressure of the receiver

(*3*) Initial and final partial pressures of the noncondensable gas in the vessel are determined using Equations 33 and 34 of this subpart.

$$P_{nc1} = P_1 - \sum_{j=1}^{m} P_j \qquad \text{(Eq. 33)}$$

$$P_{nc2} = P_2 - \sum_{j=1}^{m} P_j \qquad \text{(Eq. 34)}$$

Where:

P_{nc1}=initial partial pressure of the noncondensable gas in the vessel

P_{nc2}=final partial pressure of the noncondensable gas in the vessel

P_1=initial vessel pressure

P_2=final vessel pressure

P_j=partial pressure of each condensable VOC (including HAP) in the vessel

m=number of condensable VOC (including HAP) in the emission stream

(E) Emissions from vacuum systems shall be calculated using Equation 26 of this subpart.

(F) Emissions from gas evolution shall be calculated using Equation 8 with V calculated using Equation 27 of this subpart, T set equal to the receiver temperature, and the HAP partial pressures determined at the receiver temperature. The term for time, t, in Equation 10 of this subpart is not needed for the purposes of this calculation.

(G) Emissions from air drying shall be calculated using Equation 9 of this subpart with V equal to the air flow rate and P_i determined at the receiver temperature.

(d) *Initial compliance with storage vessel provisions.* The owner or operator of an existing or new affected source shall demonstrate initial compliance with the storage vessel standards in § 63.1362(c)(2) through (4) by fulfilling the requirements in either paragraph (d)(1), (2), (3), (4), (5), or (6) of this section, as applicable. The owner or operator shall demonstrate initial compliance with the planned routine maintenance provision in § 63.1362(c)(5) by fulfilling the requirements in paragraph (d)(7) of this section.

(1) *Percent reduction requirement for control devices.* If the owner or operator equips a Group 1 storage vessel with a closed vent system and control device, the owner or operator shall demonstrate initial compliance with the percent reduction requirement of § 63.1362(c)(2)(iv)(A) or (c)(3) either by calculating the efficiency of the control device using performance test data as specified in paragraph (d)(1)(i) of this section, or by preparing a design evaluation as specified in paragraph (d)(1)(ii) of this section.

(i) *Performance test option.* If the owner or operator elects to demonstrate initial compliance based on performance test data, the efficiency of the control device shall be calculated as specified in paragraphs (d)(1)(i)(A) through (D) of this section.

(A) At the reasonably expected maximum filling rate, Equations 35 and 36 of this subpart shall be used to calculate the mass rate of total organic HAP or TOC at the inlet and outlet of the control device.

$$E_i = K_2\left(\sum_{j=1}^{n} C_{ij}M_{ij}\right)Q_i \qquad \text{(Eq. 35)}$$

$$E_o = K_2\left(\sum_{j=1}^{n} C_{oj}M_{oj}\right)Q_o \qquad \text{(Eq. 36)}$$

Where:

C_{ij}, C_{oj} = concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, ppmv

E_i, E_o = mass rate of total organic HAP or TOC at the inlet and outlet of the control device, respectively, dry basis, kg/hr

M_{ij}, M_{oj} = molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, g/gmole

Q_i, Q_o = flow rate of gas stream at the inlet and outlet of the control device, respectively, dscmm

K_2 = constant, 2.494×10^{-6} (parts per million)$^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature is 20 °C.

(B) The percent reduction in total organic HAP or TOC shall be calculated using Equation 37 of this subpart:

$$R = \frac{E_i - E_o}{E_i}(100) \qquad \text{(Eq. 37)}$$

Where:

R = control efficiency of control device, percent

E_i = mass rate of total organic HAP or TOC at the inlet to the control device as calculated under paragraph (d)(1)(i)(A) of this section, kilograms organic HAP per hour

E_o = mass rate of total organic HAP or TOC at the outlet of the control device, as calculated under paragraph (d)(1)(i)(A) of this section, kilograms organic HAP per hour.

(C) A performance test is not required to be conducted if the control device used to comply with § 63.1362(c) (storage tank provisions) is also used to comply with § 63.1362(b) (process vent provisions), provided compliance with § 63.1362(b) is demonstrated in accordance with paragraph (c) of this section and the demonstrated percent reduction is equal to or greater than 95 percent.

(D) A performance test is not required for any control device for which a previous test was conducted, provided the test was conducted using the same procedures specified in paragraph (b) of this section.

(ii) *Design evaluation option.* If the owner or operator elects to demonstrate initial compliance by conducting a design evaluation, the owner or operator shall prepare documentation in accordance with the design evaluation provisions in paragraph (a)(1) of this section, as applicable. The design evaluation shall demonstrate that the control device being used achieves the required control efficiency when the storage vessel is filled at the reasonably expected maximum filling rate.

(2) *Outlet concentration requirement for control devices.* If the owner or operator equips a Group 1 storage vessel with a closed vent system and control device, the owner or operator shall demonstrate initial compliance with the outlet concentration requirements of

§ 63.1362(c)(2)(iv)(B) or (c)(3) by fulfilling the requirements of paragraph (a)(6) of this section.

(3) *Floating roof.* If the owner or operator equips a Group 1 storage vessel with a floating roof to comply with the provisions in § 63.1362(c)(2) or (c)(3), the owner or operator shall demonstrate initial compliance by complying with the procedures described in paragraphs (d)(3)(i) and (ii) of this section.

(i) Comply with § 63.119(b), (c), or (d) of subpart G of this part, as applicable, with the differences specified in § 63.1362(d)(2)(i) through (iii).

(ii) Comply with the procedures described in § 63.120(a), (b), or (c), as applicable, with the differences specified in paragraphs (d)(3)(ii)(A) through (C) of this section.

(A) When the term ''storage vessel'' is used in § 63.120, the definition of the term ''storage vessel'' in § 63.1361 shall apply for the purposes of this subpart.

(B) When the phrase ''the compliance date specified in § 63.100 of subpart F of this part'' is referred to in § 63.120, the phrase ''the compliance date specified in § 63.1364'' shall apply for the purposes of this subpart.

(C) When the phrase ''the maximum true vapor pressure of the total organic HAP in the stored liquid falls below the values defining Group 1 storage vessels specified in Table 5 or Table 6 of this subpart'' is referred to in § 63.120(b)(1)(iv), the phrase ''the maximum true vapor pressure of the total organic HAP in the stored liquid falls below the values defining Group 1 storage vessels specified in § 63.1361'' shall apply for the purposes of this subpart.

(4) *Flares.* If the owner or operator controls the emissions from a Group 1 storage vessel with a flare, initial compliance is demonstrated by fulfilling the requirements in paragraph (a)(3) of this section.

(5) *Exemptions from initial compliance.* No initial compliance demonstration is required for control devices specified in paragraph (a)(4) of this section.

(6) *Initial compliance with alternative standard.* If the owner or operator equips a Group 1 storage vessel with a closed-vent system and control device, the owner or operator shall demonstrate initial compliance with the alternative standard in § 63.1362(c)(4) by fulfilling the requirements of paragraph (a)(5) of this section.

(7) *Planned routine maintenance.* The owner or operator shall demonstrate initial compliance with the planned routine maintenance provisions of § 63.1362(c)(5) by including the anticipated periods of planned routine maintenance for the first reporting period in the Notification of Compliance Status report as specified in § 63.1368(f).

(e) *Initial compliance with wastewater provisions.* The owner or operator shall demonstrate initial compliance with the wastewater requirements by complying with the applicable provisions in § 63.145, except that the owner or operator need not comply with the requirement to determine visible emissions that is specified in § 63.145(j)(1), and references to compounds in Table 8 of subpart G of this part are not applicable for the purposes of this subpart. When § 63.145(i) refers to Method 18 of 40 CFR part 60, appendix A–6, the owner or operator may use any method specified in § 63.1362(d)(12) to demonstrate initial compliance with this subpart.

(f) *Initial compliance with the bag dump and product dryer provisions.* Compliance with the particulate matter concentration limits specified in § 63.1362(e) is demonstrated when the concentration of particulate matter is less than 0.01 gr/dscf, as measured using the method described in paragraph (b)(7) of this section.

(g) *Initial compliance with the pollution prevention alternative standard.* The owner or operator shall demonstrate initial compliance with § 63.1362(g)(2) and (3) for a PAI process unit by preparing the demonstration summary in accordance with paragraph (g)(1) of this section and by calculating baseline and target annual HAP and VOC factors in accordance with paragraphs (g)(2) and (3) of this section. To demonstrate initial compliance with § 63.1362(g)(3), the owner or operator must also comply with the procedures for add-on control devices that are specified in paragraph (g)(4) of this section.

(1) *Demonstration summary.* The owner or operator shall prepare a pollution prevention demonstration summary that shall contain, at a minimum, the information in paragraphs (g)(1)(i)

through (iii) of this section. The demonstration summary shall be included in the Precompliance report as specified in § 63.1368(e)(4).

(i) Descriptions of the methodologies and forms used to measure and record consumption of HAP and VOC compounds.

(ii) Descriptions of the methodologies and forms used to measure and record production of the product(s).

(iii) Supporting documentation for the descriptions provided in accordance with paragraphs (g)(1)(i) and (ii) of this section including, but not limited to, operator log sheets and copies of daily, monthly, and annual inventories of materials and products. The owner or operator must show how this documentation will be used to calculate the annual factors required in § 63.1366(f)(1).

(2) *Baseline factors*. The baseline HAP and VOC factors shall be calculated by dividing the consumption of total HAP and total VOC by the production rate, per process, for the first 3-year period in which the process was operational, beginning no earlier than the period consisting of the 1987 through 1989 calendar years. Alternatively, for a process that has been operational for less than 3 years, but more than 1 year, the baseline factors shall be established for the time period from startup of the process until the present.

(3) *Target annual factors*. The owner or operator must calculate target annual factors in accordance with either paragraph (g)(3)(i) or (ii) of this section.

(i) To demonstrate initial compliance with § 63.1362(g)(2), the target annual HAP factor must be equal to or less than 15 percent of the baseline HAP factor. For each reduction in a HAP that is also a VOC, the target annual VOC factor must be lower than the baseline VOC factor by an equivalent amount on a mass basis. For each reduction in a HAP that is not a VOC, the target annual factor must be equal to or less than the baseline VOC factor.

(ii) To demonstrate initial compliance with § 63.1362(g)(3)(i), the target annual HAP and VOC factors must be calculated as specified in paragraph (g)(3)(i) of this section, except that when "15 percent" is referred to in paragraph (g)(3)(i) of this section, "50 percent" shall apply for the purposes of this paragraph.

(4) *Requirements for add-on control devices*. Initial compliance with the requirements for add-on control devices in § 63.1362(g)(3)(ii) is demonstrated when the requirements in paragraphs (g)(4)(i) through (iii) of this section are met.

(i) The yearly reductions associated with add-on controls that meet the criteria of § 63.1362(g)(3)(ii)(A) through (D), must be equal to or greater than the amounts calculated using Equations 38 and 39 of this subpart:

$$HAP_{reduced} = \left(HF_{base}\right)\left(0.85 - R_{P2}\right)\left(M_{prod}\right) \qquad \text{(Eq. 38)}$$

$$VOC_{reduced} = \left(VF_{base} - VF_{P2} - VF_{annual}\right) \times M_{prod} \qquad \text{(Eq. 39)}$$

Where:

$HAP_{reduced}$ = the annual HAP emissions reduction required by add-on controls, kg/yr

HF_{base} = the baseline HAP factor, kg HAP consumed/kg product

R_{P2} = the fractional reduction in the annual HAP factor achieved using pollution prevention where R_{P2} is ≥0.5

$VOC_{reduced}$ = required VOC emission reduction from add-on controls, kg/yr

VF_{base} = baseline VOC factor, kg VOC emitted/kg production

VF_{P2} = reduction in VOC factor achieved by pollution prevention, kg VOC emitted/kg production

VF_{annual} = target annual VOC factor, kg VOC emitted/kg production

M_{prod} = production rate, kg/yr

(ii) Demonstration that the criteria in § 63.1362(g)(3)(ii)(A) through (D) are met shall be accomplished through a description of the control device and of the material streams entering and exiting the control device.

(iii) The annual reduction achieved by the add-on control shall be quantified using the methods described in paragraph (c) of this section.

(h) *Compliance with emissions averaging provisions.* An owner or operator shall demonstrate compliance with the emissions averaging provisions of § 63.1362(h) by fulfilling the requirements of paragraphs (h)(1) through (6) of this section.

(1) The owner or operator shall develop and submit for approval an Emissions Averaging Plan containing all the information required in § 63.1367(d). The Emissions Averaging Plan shall be submitted no later than 18 months prior to the compliance date of the standard. The Administrator shall determine within 120 calendar days whether the Emissions Averaging Plan submitted by sources using emissions averaging presents sufficient information. The Administrator shall either approve the Emissions Averaging Plan, request changes, or request that the owner or operator submit additional information. Once the Administrator receives sufficient information, the Administrator shall approve, disapprove, or request changes to the plan within 120 days. If the Emissions Averaging Plan is disapproved, the owner or operator must still be in compliance with the standard by the compliance date.

(2) For all points included in an emissions average, the owner or operator shall comply with the procedures that are specified in paragraphs (h)(2)(i) through (v) of this section.

(i) Calculate and record monthly debits for all Group 1 emission points that are controlled to a level less stringent than the standard for those emission points. Equations in paragraph (h)(5) of this section shall be used to calculate debits.

(ii) Calculate and record monthly credits for all Group 1 and Group 2 emission points that are overcontrolled to compensate for the debits. Equations in paragraph (h)(6) of this section shall be used to calculate credits. All process vent, storage vessel, and wastewater emission points except those specified in § 63.1362(h)(1) through (6) may be included in the credit calculation.

(iii) Demonstrate that annual credits calculated according to paragraph (h)(6) of this section are greater than or equal to debits calculated according to paragraph (h)(5) of this section for the same annual compliance period. The initial demonstration in the Emissions Averaging Plan or operating permit application that credit-generating emission points will be capable of generating sufficient credits to offset the debit-generating emission points shall be made under representative operating conditions. After the compliance date, actual operating data shall be used for all debit and credit calculations.

(iv) Demonstrate that debits calculated for a quarterly (3-month) period according to paragraph (h)(5) of this section are not more than 1.30 times the credits for the same period calculated according to paragraph (h)(6) of this section. Compliance for the quarter shall be determined based on the ratio of credits and debits from that quarter, with 30 percent more debits than credits allowed on a quarterly basis.

(v) Record and report quarterly and annual credits and debits as required in §§ 63.1367(d) and 63.1368(d).

(3) Credits and debits shall not include emissions during periods of malfunction. Credits and debits shall not include periods of startup and shutdown for continuous processes.

(4) During periods of monitoring excursions, credits and debits shall be adjusted as specified in paragraphs (h)(4)(i) through (iii) of this section.

(i) No credits shall be assigned to the credit-generating emission point.

(ii) Maximum debits shall be assigned to the debit-generating emission point.

(iii) The owner or operator may demonstrate to the Administrator that full or partial credits or debits should be assigned using the procedures in § 63.150(l) of subpart G of this part.

(5) Debits are generated by the difference between the actual emissions from a Group 1 emission point that is uncontrolled or controlled to a level less stringent than the applicable standard and the emissions allowed for the Group 1 emission point. Debits shall be calculated in accordance with

the procedures specified in paragraphs (h)(5)(i) through (iv) of this section.

(i) Source-wide debits shall be calculated using Equation 40 of this subpart. Debits and all terms of Equation 40 of this subpart are in units of Mg/month

$$\text{Debits} = \sum_{i=1}^{n}\left[EPV_{iA} - (0.10)(EPV_{iU})\right] + \sum_{i=1}^{n}\left[ES_{iA} - (0.05)(ES_{iU})\right] + \sum_{i=1}^{n}\left[EWW_{iA} - (EWW_{iC})\right] \qquad \text{(Eq. 40)}$$

Where:

EPV_{iU} = uncontrolled emissions from process i calculated according to the procedures specified in paragraph (h)(5)(ii) of this section

EPV_{iA} = actual emissions from each Group 1 process i that is uncontrolled or is controlled to a level less stringent than the applicable standard. EPV_{iA} is calculated using the procedures in paragraph (h)(5)(ii) of this section

ES_{iU} = uncontrolled emissions from storage vessel i calculated according to the procedures specified in paragraph (h)(5)(iii) of this section

ES_{iA} = actual emissions from each Group 1 storage vessel i that is uncontrolled or is controlled to a level less stringent than the applicable standard. ES_{iA} is calculated using the procedures in paragraph (h)(5)(iii) of this section

EWW_{iC} = emissions from each Group 1 wastewater stream i if the standard had been applied to the uncontrolled emissions. EWW_{iC} is calculated using the procedures in paragraph (h)(5)(iv) of this section

EWW_{iA} = actual emissions from each Group 1 wastewater stream i that is uncontrolled or is controlled to a level less stringent than the applicable standard. EWW_{iA} is calculated using the procedures in paragraph (h)(5)(iv) of this section

n = the number of emission points being included in the emissions average; the value of n is not necessarily the same for process vents, storage tanks, and wastewater

(ii) Emissions from process vents shall be calculated in accordance with the procedures specified in paragraphs (h)(5)(ii)(A) through (C) of this section.

(A) Except as provided in paragraph (h)(5)(ii)(C) of this section, uncontrolled emissions for process vents shall be calculated using the procedures that are specified in paragraph (c)(2) of this section.

(B) Except as provided in paragraph (h)(5)(ii)(C) of this section, actual emissions for process vents shall be calculated using the procedures specified in paragraphs (c)(2) and (c)(3) of this section, as applicable.

(C) As an alternative to the procedures described in paragraphs (h)(5)(ii)(A) and (B) of this section, for continuous processes, uncontrolled and actual emissions may be calculated by the procedures described in § 63.150(g)(2) of subpart G of this part. For purposes of complying with this paragraph, a 90 percent reduction shall apply instead of the 98 percent reduction in § 63.150(g)(2)(iii) of subpart G of this part, and the term ''process condenser'' shall apply instead of the term ''recovery device'' in § 63.150(g)(2) for the purposes of this subpart.

(iii) Uncontrolled emissions from storage vessels shall be calculated in accordance with the procedures described in paragraph (d)(1) of this section. Actual emissions from storage vessels shall be calculated using the procedures specified in § 63.150(g)(3)(ii), (iii), or (iv) of subpart G of this subpart, as appropriate, except that when § 63.150(g)(3)(ii)(B) refers to the procedures in § 63.120(d) for determining percent reduction for a control device, § 63.1365(d)(2) or (3) shall apply for the purposes of this subpart.

(iv) Emissions from wastewater shall be calculated using the procedures specified in § 63.150(g)(5) of subpart G of this part.

(6) Credits are generated by the difference between emissions that are allowed for each Group 1 and Group 2 emission point and the actual emissions from that Group 1 or Group 2 emission point that have been controlled after November 15, 1990 to a level more stringent than what is required in this subpart or any other State or Federal rule or statute. Credits shall be calculated in accordance

with the procedures specified in paragraphs (h)(6)(i) through (v) of this section.

(i) Source-wide credits shall be calculated using Equation 41 of this subpart. Credits and all terms in Equation 41 of this subpart are in units of Mg/month, the baseline date is November 15, 1990, the terms consisting of a constant multiplied by the uncontrolled emissions are the emissions from each emission point subject to the standards in § 63.1362(b) and (c) that is controlled to a level more stringent than the standard.

$$\text{Credits} = D\sum_{i=1}^{n}\left[(0.10)\left(EPV1_{iU}\right) - EPV1_{iA}\right] + D\sum_{i=1}^{m}\left(EPV2_{iB} - EPV2_{iA}\right) + D\sum_{i=1}^{n}\left[(0.05)\left(ES1_{iU}\right) - ES1_{iA}\right] + D\sum_{i=1}^{m}\left(ES2_{iB} - ES2_{iA}\right) + D\sum_{i=1}^{n}\left(EWW1_{iC} - EWW1_{iA}\right) + D\sum_{i=1}^{m}\left(EWW2_{iB} - EWW2_{iA}\right) \quad \text{(Eq. 41)}$$

Where:

$EPV1_{iU}$ = uncontrolled emissions from each Group 1 process i calculated according to the procedures in paragraph (h)(6)(iii)(A) of this section

$EPV1_{iA}$ = actual emissions from each Group 1 process i that is controlled to a level more stringent than the applicable standard. $EPV1_{iA}$ is calculated according to the procedures in paragraph (h)(6)(iii)(B) of this section

$EPV2_{iB}$ = emissions from each Group 2 process i at the baseline date. $EPV2_{iB}$ is calculated according to the procedures in paragraph (h)(6)(iii)(C) of this section

$EPV2_{iA}$ = actual emissions from each Group 2 process i that is controlled. $EPV2_{iA}$ is calculated according to the procedures in paragraph (h)(6)(iii)(C) of this section

$ES1_{iU}$ = uncontrolled emissions from each Group 1 storage vessel i calculated according to the procedures in paragraph (h)(6)(iv) of this section

$ES1_{iA}$ = actual emissions from each Group 1 storage vessel i that is controlled to a level more stringent that the applicable standard. $ES1_{iA}$ is calculated according to the procedures in paragraph (h)(6)(iv) of this section

$ES2_{iB}$ = emissions from each Group 2 storage vessel i at the baseline date. $ES2_{iB}$ is calculated according to the procedures in paragraph (h)(6)(iv) of this section

$ES2_{iA}$ = actual emissions from each Group 2 storage vessel i that is controlled. $ES2_{iA}$ is calculated according to the procedures in paragraph (h)(6)(iv) of this section

$EWW1_{iC}$ = emissions from each Group 1 wastewater stream i if the standard had been applied to the uncontrolled emissions. $EWW1_{iC}$ is calculated according to the procedures in paragraph (h)(6)(v) of this section

$EWW1_{iA}$= emissions from each Group 1 wastewater stream i that is controlled to a level more stringent that the applicable standard. $EWW1_{iA}$ is calculated according to the procedures in paragraph (h)(6)(v) of this section

$EWW2_{iB}$ = emissions from each Group 2 wastewater stream i at the baseline date. $EWW2_{iB}$ is calculated according to the procedures in paragraph (h)(6)(v) of this section

$EWW2_{iA}$ = actual emissions from each Group 2 wastewater stream i that is controlled. $EWW2_{iA}$ is calculated according to the procedures in paragraph (h)(6)(v) of this section

n = number of Group 1 emission points that are included in the emissions average. The value of n is not necessarily the same for process vents, storage tanks, and wastewater

m = number of Group 2 emission points included in the emissions average. The value of m is not necessarily the same for process vents, storage tanks, and wastewater

D = discount factor equal to 0.9 for all credit-generating emission points except those controlled by a pollution prevention measure, which will not be discounted

(ii) For an emission point controlled using a pollution prevention measure, the nominal efficiency for calculating credits shall be as determined as described in § 63.150(j) of subpart G of this part.

(iii) Emissions from process vents shall be calculated in accordance with the procedures specified in paragraphs (h)(6)(iii)(A) through (C) of this section.

(A) Uncontrolled emissions from Group 1 process vents shall be calculated according to the procedures in paragraph (h)(5)(ii)(A) or (C) of this section.

(B) Actual emissions from Group 1 process vents with a nominal efficiency greater than the applicable standard or a pollution prevention measure that achieves reductions greater than the applicable standard shall be calculated using Equation 42 of this subpart:

$$EPV1_{iA} = EPV1_{iU} \times \left[1 - N_{eff}/100\right] \qquad (\text{Eq. } 42)$$

Where:

$EPV1_{iA}$ = actual emissions from each Group 1 process i that is controlled to a level more stringent than the applicable standard

$EPV1_{iU}$ = uncontrolled emissions from each Group 1 process i

N_{eff} = nominal efficiency of control device or pollution prevention measure, percent

(C) Baseline and actual emissions from Group 2 process vents shall be calculated according to the procedures in § 63.150(h)(2)(iii) and (iv) with the following modifications:

(*1*) The term ''90 percent reduction'' shall apply instead of the term ''98 percent reduction''; and

(*2*) When the phrase ''paragraph (g)(2)'' is referred to in § 63.150(h)(2)(iii) and (iv), the provisions in paragraph (h)(5)(ii) of this section shall apply for the purposes of this subpart.

(iv) Uncontrolled emissions from storage vessels shall be calculated according to the procedures described in paragraph (d)(1) of this section. Actual and baseline emissions from storage tanks shall be calculated according to the procedures specified in § 63.150(h)(3) of subpart G of this part, except when § 63.150(h)(3) refers to § 63.150(g)(3)(i), paragraph (d)(1) of this section shall apply for the purposes of this subpart.

(v) Emissions from wastewater shall be calculated using the procedures in § 63.150(h)(5) of subpart G of this part.

[64 FR 33589, June 23, 1999, as amended at 67 FR 59347, Sept. 20, 2002]

§ 63.1366 Monitoring and inspection requirements.

(a) To provide evidence of continued compliance with the standard, the owner or operator of any existing or new affected source shall install, operate, and maintain monitoring devices as specified in this section. During the initial compliance demonstration, maximum or minimum operating parameter levels, or other design and operating characteristics, as appropriate, shall be established for emission sources that will indicate the source is in compliance. Test data, calculations, or information from the evaluation of the control device design, as applicable, shall be used to establish the operating parameter level or characteristic.

(b) *Monitoring for control devices*—(1) *Parameters to monitor.* Except as specified in paragraph (b)(1)(i) of this section, for each control device, the owner or operator shall install and operate monitoring devices and operate within the established parameter levels to ensure continued compliance with the standard. Monitoring parameters are specified for control scenarios in paragraphs (b)(1)(ii) through (xii) of this section, and are summarized in Table 3 of this subpart.

(i) *Periodic verification.* For control devices that control vent streams containing total HAP emissions less than 0.91 Mg/yr, before control, monitoring shall consist of a periodic verification that the device is operating properly. This verification shall include, but not be limited to, a daily or more frequent demonstration that the unit is working as designed and may include the daily measurements of the parameters described in paragraphs (b)(1)(ii) through (xii) of this section. This demonstration shall be included in the Precompliance plan, to be submitted 6 months prior to the compliance date of the standard.

(ii) *Scrubbers.* For affected sources using liquid scrubbers, the owner or operator shall establish a minimum scrubber liquid flow rate or pressure drop as a site-specific operating parameter which must be measured and recorded at least once every 15 minutes during the period in which the scrubber is controlling HAP from an emission stream as required by the standards in § 63.1362. If the scrubber uses a caustic solution to remove acid emissions, the